REMARKS

Claims 1-9, 11, 12, 14-20, 31 and 32 have been amended. No new matter has been introduced. Claims 10, 13 and 21-30 have been canceled. Claims 33-36 have been added to round the scope of protection afforded by the invention. Claims 1-9, 11, 12, 14-20 and 31-36 are pending in this application.

Claims 1-20, 31 and 32 stand rejected under 35 U.S.C. § 112, first paragraph, as not being supported in the application as originally filed. Claim 1 has been amended. The claims are submitted as being fully supported by the disclosure.

Claims 1-20, 31 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant's admitted prior art (APA) in combination with U.S. Patent Appl. 2002/0062923 ("Forray"). Applicant respectfully traverses all prior art rejections.

The present invention as recited in amended claim 1 is a semiconductor device assembly that includes "a solder mask over a substrate," "a die," "conductive paths connecting contacts on the die with contacts on said substrate" and "a partially-cured adhesive layer between said die and said solder mask, wherein said partially-cured adhesive layer is partially cured at a temperature below about 100°C."

Applicant's admitted prior art (APA) relates to conventional, high-temperature curing of a solder mask adhesive layer. The APA does not teach or suggest a semiconductor device assembly having a "partially-cured adhesive layer" as recited in claim 1 of the present application. The Office Action admits that APA does not teach or suggest an adhesive layer that is "partially cured at a temperature below about 100°C." The APA also does not teach or suggest a semiconductor device assembly having "a solder mask," "a die," "conductive paths connecting contacts on the die with contacts on said substrate," and "a partially-cured adhesive layer between said die and said solder mask, wherein said partially-cured adhesive layer is partially cured at a temperature below about 100°C." Consequently, the APA does not anticipate or render obvious the present invention as recited in amended claim 1.

Forray does not cure the deficiencies of the APA. Forray discloses devices bonded to a substrate by a method that reduces void formation in a cured adhesive formulation. Forray does not teach or suggest a semiconductor device assembly including "a solder mask over a substrate," "a die," "conductive paths connecting contacts on the die with contacts in said substrate," and "a partially-cured adhesive layer between said die and said solder mask, wherein said partially-cured adhesive layer is partially cured at a temperature below about 100°C." Forray contains no teaching or suggestion of conductive paths connected to the assembly while the adhesive is only partially cured. Thus, Forray, taken alone or in combination with the APA, does not anticipate or render obvious the present invention as recited in amended claim 1. Claim 1, and its dependent claims 2-11, 31, and 33-34 are submitted as being patentable over the cited references.

The present invention as recited in amended claim 12 is a semiconductor device assembly including "a solder mask on a substrate," "a die," "electrical contacts on said substrate and said die, each said contact on said die being wire bonded to a respective said contact on said substrate, said electrical contacts being devoid of contamination caused by outgassing from said solder mask," and "a partially-cured adhesive layer affixing said die to said solder mask, said adhesive layer being partially cured, said adhesive layer having been subjected to partial curing at a temperature below about 100°C and at a temperature between about 20°C and about 50°C higher than a glassy temperature of said adhesive layer."

As noted above, APA relates to conventional, high-temperature curing of a solder mask adhesive layer. Semiconductor device assemblies having a "partially-cured adhesive layer" are not disclosed. The Office Action admits that adhesive layers that are "partially cured at a temperature below about 100°C" are not disclosed in the APA. The APA also does not teach or suggest a semiconductor device assemblage including "a solder mask on a substrate," "a die," "electrical contacts on said substrate and said die, each said contact on said die being wire bonded to a respective said contact on said substrate, said electrical contacts being devoid of contamination caused by outgassing from said solder mask," and "a partially-cured adhesive layer affixing said die to said solder mask, said

adhesive layer being partially cured, said adhesive layer having been subjected to partial curing at a temperature below about 100°C and at a temperature between about 20°C and about 50°C higher than a glassy temperature of said adhesive layer." Thus, the APA does not anticipate or render obvious the present invention as recited in amended claim 12.

Forray does not cure the deficiencies of the APA. Forray discloses device bonded to a substrate by a method that reduces void formation in a cured adhesive formulation. Forray does not teach or suggest a semiconductor device assembly including "a solder mask on a substrate," "a die," "electrical contacts on said substrate and said die, each said contact on said die being wire bonded to a respective said contact on said substrate, said electrical contacts being devoid of contamination caused by outgassing from said solder mask," and "a partially-cured adhesive layer affixing said die to said solder mask, said adhesive layer having been subjected to partial curing at a temperature below about 100°C and at a temperature between about 20°C and about 50°C higher than a glassy temperature of said adhesive layer." Forray contains no teaching or suggestion of a semiconductor assembly having adhesive partially cured and wire bonds. Thus, the combination of Forray and the APA does not anticipate or render obvious the present invention as recited in amended claim 12. Claim 12, and its dependent claims 13-20, 32, and 35-36 are submitted as being patentable over the cited references.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

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Respectfully submitted,

By_____

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